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Cardio-Diabetes

Detection of silent myocardial ischaemia in type 2 diabetes mellitus by exercise treadmill test

R. Girish *, A.S. Menon, Sudhir Kumar

Department of Cardiology, Command Hospital (Central Command), Lucknow Cantt 226002, U.P., India

Background: The present study was conducted to evaluate the utility of exercise treadmill test (ETT) to detect silent myocardial ischaemia due to asymptomatic coronary artery disease (CAD) in patients with type 2 diabetes mellitus (T2DM).
Methods: A total of 100 patients with T2DM without clinical evidence of CAD and with normal resting ECG were studied between April 2014 and March 2015 using ETT.
Results: ETT was negative for inducible ischaemia in 87 (87%) patients while 13 (13%) of the 100 asymptomatic patients who had positive ETT, and coronary angiography was performed on them. One (1%) patient had triple vessel disease and was subjected to coronary artery bypass graft surgery; 10 (10%) had noncritical CAD and two (2%) had normal epicardial coronaries. Those with a positive ETT were 45 years of age or older and had diabetes mellitus for 5 years or longer.
Conclusion: It would be cost-effective if screening for asymptomatic CAD be limited to diabetic patients aged ≥45 years or with duration of diabetes ≥5 years.

Prevalence of cardiac autonomic neuropathy in diabetes mellitus type 2 with diabetic foot

R. Girish *, A.S. Menon, Abhinav Dixit

Department of Cardiology, Command Hospital (Central Command), Lucknow Cantt 226002, UP, India

Introduction: The prevalence of Cardiovascular Autonomic Neuropathy (CAN) varies widely from 2.5% to 50%. CAN is significantly associated with overall mortality and with morbidity such as silent coronary artery disease, stroke, and perioperative morbidity. CAN assessment is useful for cardiovascular risk stratification in patients with diabetes. Despite the conceptually high risk of cardiac autonomic neuropathy among patients with diabetes, there is almost no study carried out to establish this relationship.
Materials: Fifty patients attending a diabetic clinic were graded according to Foot Risk Score (FRS) proposed by Foot Care Interest Group of American Diabetes Association: FRS 1 Loss of Proprioception (LOPS) ± deformity, FRS 2-Peripheral Arterial Disease (PAD) ± LOPS, Grade 3-History of foot ulcer or amputation. LOPS was assessed by using Semmes Weinstein monofilament and 128 Hz tuning fork. PAD was assessed by palpating posterior tibial and dorsalis pedis pulses .CAN was assessed by a battery of three parasympathetic (heart rate variation to deep breathing, active standing and Valsalva) and two sympathetic tests (blood pressure variation after sustained hand grip and postural change). Presence of CAN was graded as PROBABLE if one test was abnormal and DEFINITE if two or more tests were abnormal.
Observation: The percentage of patients with FRS 1, 2, and 3 were 58%, 32%, and 5%, respectively. Definite CAN was present in 89.7% of population with FRS 1 and all patients with FRS 2 and 3. Of all patients with definite CAN test, 92% patients had abnormal Valsalva, 78% had abnormal hand grip, 58% had abnormal E/I ratio, 26% had abnormal 30/15 ratio, and 12% had abnormal orthostatic hypotension. With those with definite CAN, 82.97% of cases had sympathetic dysfunction while all had parasympathetic dysfunction.
Conclusions: A high prevalence of CAN in patients with type 2 diabetes mellitus with foot at risk was documented. Abnormalities of parasympathetic activity were more common than those of sympathetic activity in the present study.

Emerging novel cardiovascular risk factors in chronic kidney disease with and without diabetes mellitus

Prabal Rajvanshi

Professor, Medicine and Former Incharge Cardiology, S.J. Hospital, New Delhi 110049, India

Introduction: Diabetes and CKD are twin culprits of cardiovascular disease and very high mortality rates have been seen in CKD patients with diabetes that cannot be accounted by traditional risk factors alone; so novel cardiovascular risk factors have been explored. As such, the aim of this study is to analyze cumulative burden of these novel cardiovascular risk factors in CKD patients with and without diabetes in multiethnic predialysis patients in India.
Methods: In this study, 70 adult CKD patients (35 diabetics and 35 non-diabetics) who did not require dialysis were randomly selected. Staging of these patients was done according to eGFR using MDRD formula. Novel cardiovascular risk factors were analyzed and compared between diabetic and non-diabetic CKD patients.
Observation: Out of 140 patients taken, 78 were males and 62 were females. Mean age of study group was 45.51 ± 10.54 years for non-diabetics and 44.51 ± 11.36 for diabetes. Patients with eGFR <60 ml/min/1.73 mm^2 were included in these groups.